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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference BP106601	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/FI 03/00445	International filing date (day/month/year) 05.06.2003	Priority date (day/month/year) 06.06.2002
International Patent Classification (IPC) or both national classification and IPC D21G1/00		
Applicant METSO PAPER, INC. et al.		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 2 sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the opinion II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

Date of submission of the demand 14.10.2003	Date of completion of this report 10.09.2004
Name and mailing address of the International preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Bichi, M Telephone No. +49 89 2399-2055



INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

International application No. PCT/FI 03/00445

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-10 as originally filed

Claims, Numbers

1-7 received on 17.05.2004 with letter of 13.05.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

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5. This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-7
	No: Claims	
Inventive step (IS)	Yes: Claims	
	No: Claims	1-7
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

see separate sheet

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- 1). Contrary to the arguments of the applicant D2 already discloses a **first, last and an intermediate roll which are fixedly attached to the frame** (see in particular figure 1 and col. 5, lines 53 to col. 6, line 18, whereby figure 10 and col.6, lines 37-39 disclose an embodiment indeed having a piston rising the lower roll). The moving casings in D2 are the "roll jacket or shell 11", see col.6, lines 3,4. It is pointed out that the wording of present claim 1 does not exclude at all that for example the "intermediate roll fixedly attached to the calender frame" can be further provided with internal loading elements: also the first and last rolls of the present application are "fixedly attached to the frame" but have indeed internal loading devices.
D2 further shows also lightening elements for lightening the auxiliary means or/and the weight of the other intermediate rolls. The feature related to the alternating metal/polymer coated rolls is well known in the field (see D1 and D5), so that this feature alone cannot involve an inventive step.
The subject-matter of claim 1 would thus appear to be essentially already known from D2, minor differing constructional features lying well within the usual capacities of the person skilled in the art and cannot be seen as involving an inventive step. Claim 1 therefore would not appear to meet the requirements of Article 33(3) PCT.
- 2). Moreover the subject-matter of claim 1 is not correctly drafted in the two-part form having regard to the closest prior art document D2. In particular all the features known from this document are not placed in the preamble of such a claim (see point 1 above).
- 3). Moreover claim 1 is still very unclear, thus not satisfying the requirements of Art. 6 PCT as follows:
 - the third paragraph of the claim ("every other roll etc.") is unclear.
 - in the fourth paragraph of claim 1 a discrepancy between description and the present passage is present (relating to the and/or: see description page 6, lines 15-18, page 7, lines 3-5; page 2, line 35). Moreover the expression "in which case" at the end of this paragraph would not appear to be appropriate. Probably it should be attached to the following paragraph as "whereby the roll nips in the set of rolls are closed as follows:..."
- 4). Present claim 3 is a repetition of claim 2. Apparently is an error: instead it should

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be drafted as the originally filed claim 5.

- 5). The dependent claims do not appear to contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step. The features herein disclosed would appear to be merely some of several constructional possibilities from which the skilled man would select, in accordance with circumstances, without the exercise of inventive skill. Hints thereto could furthermore easily be taken from the above mentioned documents D1-D5, all strictly related to the field.
- 6). The documents D2, D3 and D5 are not identified in the description and the relevant background art disclosed therein is not briefly discussed according to the requirements of Rule 5(a)(ii) PCT.
- 7). The description is not conformity with the new claims.

Claims

1. Arrangement for closing roll nips (N) in the multi-nip calender (1), in which the calender consists of one or several sets of rolls (2) attached to one or several frames (7) so that each set of rolls has at least three rolls, and at least the first roll (3; 5) and the last roll (3; 32) in the set of rolls is provided with equipment, with which their casing can be moved to the direction of the intermediate rolls (4) in the said set of rolls, **characterised** in that
 - the first roll (3; 31) and the last roll (3; 32) in the set of rolls are fixedly attached;
 - at least one of the intermediate rolls (4) in the set of rolls is fixedly attached, and 10 the other intermediate rolls are provided with lightening elements for lightening the auxiliary means related to the intermediate rolls in which case
 - the roll nips (N) in the set of rolls (2) is closed so that
 - the roll nips between the first roll (3; 31) and the fixed intermediate roll are closed by moving the first roll in the set of rolls in the direction parallel to the plane of the 15 set of rolls towards the intermediate rolls (4),
 - the roll nips between the last roll (3; 32) and the fixed intermediate roll are closed by moving the last roll in the set of rolls in the direction parallel to the plane of the set of rolls towards the intermediate rolls (4).
2. Arrangement according to claim 1, in which the intermediate rolls (4) are further provided with equipment for lightening the own weight of the intermediate rolls, **characterised** in that the first roll (3; 31) and the last roll (3; 32) in the set of rolls are provided with internal devices (31a, 32a) of the rolls, with which deviations caused by the own gravity of the said rolls can be compensated in the deflection of the said rolls, and that also the casings (31b, 32b) of the first roll and the last roll 20 can be moved by the said internal devices in the direction parallel to the plane of the set of rolls towards the intermediate rolls (4).
3. Arrangement according to claim 1 or 2, **characterised** in that at least one intermediate roll (4), the first roll (3; 31) and/or the last roll (3; 32) are fixedly attached to the calender frame.
- 30 4. Arrangement according to one of the preceding claims, **characterised** in that the first roll (3; 31) and/or the last roll (3; 32) are shoe rolls, in which one or several shoe elements (31a, 32a) are located under the casing of the roll, at the place of the

roll nip (N; Na1, Na2), which can be loaded with liquid so that the casing (31b; 32b) of the said shoe roll moves in relation to the intermediate rolls in the set of rolls.

5. Arrangement according to claim 4, **characterised** in that the shoe roll (3; 31, 32) has two or several shoe elements (31a, 32a) for moving the casing of the roll and for profiling the fibre web (W).

6. Arrangement according to one of the claims 1 – 5, in which further the linear load distribution of the roll nips (N) in the set of rolls is controlled by an additional load brought to the first and/or last roll (3; 31, 32) in the set of rolls, **characterised** in that

10 - the additional load of the first roll (3; 31) in the set of rolls (2) is used for influencing the linear loads of the roll nips of the intermediate rolls between the attached intermediate roll and the last roll to a substantially lesser extent than the linear loads of the roll nips between the attached intermediate roll and the first roll, and

15 - the additional load of the last roll (3; 32) in the set of rolls (2) is used for influencing the linear loads of the roll nips of the intermediate rolls between the attached intermediate roll and the first roll to a substantially lesser extent than the linear loads of the roll nips between the attached intermediate roll and the last roll.

7. Arrangement according to claim 6, **characterised** in that the additional load is brought to the first and/or last roll (3; 31, 32) in the set of rolls using the internal loading elements of the said roll.

8. Arrangement according to claim 7, **characterised** in that the additional load is brought to the first and/or last roll (3; 31, 32) in the set of rolls (2) using a loading element outside the said roll, such as a roll outside the set of rolls.